# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/670,129 | 09/26/2000 | Vladimir R. Pisarsky | US000262 | 5658 |

7590        01/14/2005

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| EXAMINER |
|---|
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| ART UNIT | PAPER NUMBER |
|---|---|
| 2123 | |

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/670,129 | PISARSKY, VLADIMIR R. |
| | Examiner | Art Unit | |
| | Ayal I Sharon | 2123 | |

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence address --

## Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on _29 October 2004_.

2a)☐ This action is **FINAL**.       2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) _10 and 13-16_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _10 and 13-16_ is/are rejected.

7)☒ Claim(s) _10_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _16 April 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All  b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

### *Introduction*

1. Claims 10 and 13-16 of U.S. Application 09/670,129, originally filed on 09/26/2000 are presented for examination. Claims 3-4 and 7-9 were previously cancelled. In the amendment filed with the RCE on 10/29/2004, claims 1-2, 5-6, and 11-12 were cancelled, and claims 10 and 13 were amended.

2. In the Final Office Action before the RCE, Examiner indicated subject matter in Claim 10 that appeared to be allowable based upon the search results at that time. However, a further search performed after the filing of the RCE has produced relevant art which has been applied in the claim rejections.

### *Claim Objections*

3. Claim 10, as it appears in the amendment filed on 7/26/2004, is objected to because of the following informalities. Examiner recommends the following amendments:

    a. On page 3, line 15, change from:

        -----the *stat* of each ... -----

        to

        -----the *stat_* of each ... ----.

    b. On page 3, line 20, change from:

-----least upon the *receive* ... -----

to

----- least upon the *receive**d*** ... ----.

c. On page 3, line 26, change from:

-----... determined that received ... -----

to

-----... determined that **the** received ... -----.

4. Some form of correction is required.


## Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The prior art used for these rejections is as follows:

7. Lometti et al., U.S. Patent 6,647,519. (Henceforth referred to as "**Lometti**").

8. The claim rejections are hereby summarized for Applicant's convenience. The

detailed rejections follow.

9. **Claims 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated**

**by Lometti.**

10. In regards to Claim 10, Lometti teaches the following limitations:

10. (Currently Amended) A method of determining the integrity of a distributed information processing system including a plurality of networked devices, each device including a finite state machine (FSM), the method comprising:
(See Lometti, especially: Abstract; col.1, lines 5-65; col.2, lines 22-55)

performing a primary task in each of the plurality of networked devices, the primary task having a computation requirement that varies over time;
(See Lometti, especially: Abstract; col.1, lines 5-65; col.2, lines 22-55)

Lometti teaches a method for detecting telecommunications network "miscommunication events". Examiner finds that sending data frames over a telecomm network, as taught by Lometti, corresponds to the claimed primary task.

performing a secondary task in each of the plurality of networked devices, wherein performing the secondary task in a first one of the plurality of networked devices includes generating, per time step, a respective numerical value that depends on a corresponding numerical value in each of the others of the plurality of networked devices at a previous time step;
(See Lometti, especially: Abstract; col.1, lines 5-65; col.2, lines 22-55)

Examiner finds that the "Trace Identifier" taught by Lometti, and as specified by "many standardization protocols, such as ITU-T G707 and ITU-T G7383" (see Lometti, col.1) correspond to the claimed "numerical value".

receiving, at a control server, update information regarding the state of each of the plurality of networked devices;
(See Lometti, especially: Abstract; col.3, lines 35-57)

Examiner finds that Lometti's "received trace identifier (TI)" corresponds to the claimed "state of each of the plurality of networked devices"

simulating, in the control server, the secondary task of each of the plurality of networked devices, wherein simulating the secondary task in the control server includes generating, per time step, numerical values for each of the simulated secondary tasks, based at least upon the received update information;
(See Lometti, especially: Abstract; col.1, lines 5-65; col.2, lines 22-55)

Examiner finds that Lometti's "expected received trace identifier (ETI)" corresponds to the claimed "numerical values for each of the simulated secondary tasks".

receiving, at the control server, the numerical values generated by the plurality of networked devices; and
(See Lometti, especially: Abstract; col.1, lines 5-65; col.2, lines 22-55)

determining by the control server whether the received numerical values are equal to the simulated numerical values; and
(See Lometti, especially: Abstract; col.1, lines 5-65; col.2, lines 22-55)

Lometti expressly teaches (col.2, lines 22-55, emphasis added):

"The present invention relates to a mismatch detection method in trace identifiers contained in data frames, in particular SDH (Synchronous Digital Hierarchy) coded data frames within a telecommunication network, wherein <u>said received trace identifiers are compared with expected trace identifiers</u> in determined locations of the communication network, to detect if a misconnection event has occurred and generate an alarm signal."

<u>generating an alert if it is determined that received numerical values are not equal to the simulated values;</u>
Lometti expressly teaches (col.2, lines 22-55, emphasis added):

"The present invention relates to a mismatch detection method in trace identifiers contained in data frames, in particular SDH (Synchronous Digital Hierarchy) coded data frames within a telecommunication network, wherein said received trace identifiers are compared with expected trace identifiers in determined locations of the communication network, to detect if a misconnection event has occurred <u>and generate an alarm signal.</u>"

wherein generating the numerical value, per time step, in each of the networked devices, further depends on a history of previous numerical values of the device performing the secondary task, the history has a length, and the length is dynamically modified in inverse relation to the computational requirements of the primary task.

Examiner finds these features to be inherent to finite state machines: the current value depends on the history of previous values, the history must have a finite length. Lometti teaches the use of finite state machines TMAC and TMACX (see col.7, lines 7-36).

Moreover, Examiner finds that it is inherent to computer programs ("computation tasks") that the rate of the outputs they produce in inversely proportional to "computational requirements" of the computer program. In other words, the simpler the program, the more times it can be run in a fixed time period, and therefore the more outputs it can produce.

11. In regards to Claim 13, Lometti teaches the following limitations:

13. (Currently Amended) The method of Claim 10, wherein generating the numerical value further depends on an internal state of the device performing the secondary task.

Examiner finds this feature to be inherent to finite state machines – the value generated by the FSM always depends on the internal state of the FSM.

## Claim R j ctions - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. The prior art used for these rejections is as follows:

14. Lometti et al., U.S. Patent 6,647,519. (Henceforth referred to as "**Lometti**").

15. The claim rejections are hereby summarized for Applicant's convenience. The

detailed rejections follow.

16. **Claims 14-16 rejected under 35 U.S.C. 103(a) as being unpatentable over**

**Lometti in view of Official Notice.**

17. In regards to Claim 14, Lometti teaches the following limitations:

14. (Previously Presented) The method of Claim 13, wherein the internal state includes a memory content, and an I/O buffer content of the device performing the secondary task.

Examiner finds it to be inherent that finite state machines must be an

internal memory in order to retain the internal state.

In regards to the storage of an I/O buffer in an FSM, Official Notice is

given that it would have been obvious to one of ordinary skill in the art at the time

the invention was made to store an I/O buffer in an FSM because it was old and

well known that storing I/O info in a buffer speeds up the FSM state updates.

18. In regards to Claim 15, Lometti teaches the following limitations:

15. (Previously Presented) The method of Claim 14, wherein the secondary task is chosen such that the performance of the secondary tasks by networked devices results in the behavior of a dynamic non-periodic stochastic process.

Lometti teaches (col.2, lines 23-30) that the mismatch detection "...consider[s] both the probability of transmission line error and misconnection detection speed." Examiner finds that the probability of transmission line error is a non-periodic stochastic process.

19. In regards to Claim 16, Lometti teaches the following limitations:

16. (Previously Presented) The method of Claim 15, wherein the control server is geographically remote from the networked devices.

Examiner finds this to be inherent in the telecomm network taught by Lometti.

### *Response to Amendment*

#### *Re: Claim Rejections - 35 USC § 101*

20. The cancellation of claims 1-2 and 5-6 have rendered the rejections of these claims irrelevant.

21. The amendment of claim 10 to include the limitation "generating an alert if it is determined that received numerical values are not equal to the simulated values" has overcome the 35 USC § 101 rejection which was based on the previous final step of "determining whether there is a mismatch between the received numerical values and the simulated numerical values" as being not concrete useful or tangible. Therefore the 35 USC § 101 rejection of Claim 10 has been withdrawn.

## *Re: Claim Rejections - 35 USC § 112*

22. The cancellation of claims 1-2 and 5-6 have rendered the rejections of these claims irrelevant.

23. The amendment of claim 10 to include the limitation "determining by the control server whether the received numerical values are equal to the simulated values". This amended limitation overcomes the 35 USC § 112 rejection which was based on the ambiguity of the previous version of this limitation, which claimed an ambiguous step of "determining whether there is a mismatch between the received numerical values and the simulated numerical values".

24. Moreover, the amendment of claim 10 to include the limitation "... generating an alert if it is determined that the received numerical values are not equal to the simulated values". This amended limitation overcomes the 35 USC § 112 rejection which was based on the previous ambiguity in regards to what was done with the determination. Previously, there was no output cited for the invention claimed in Claim 10, merely a final step of "determining whether there is a mismatch between the received numerical values and the simulated numerical values."

25. Therefore, these 35 USC § 112 rejections of Claim 10 have been withdrawn.

### *Correspondence Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (703) 306-0297. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (703) 305-9704. Any response to this office action should be mailed to:

Director of Patents and Trademarks
Washington, DC 20231

Hand-delivered responses should be brought to the following office:

4th floor receptionist's office
Crystal Park 2
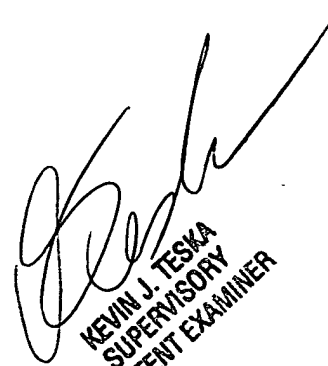2121 Crystal Drive
Arlington, VA

The fax phone number is:          (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is:

(703) 305-3900.

Ayal I. Sharon

Art Unit 2123

January 5, 2005